

AMENDMENTS TO THE CLAIMS

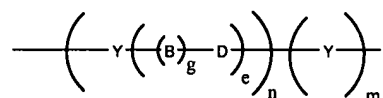
Claims 1-19: (Canceled)

20. (Currently Amended) An apparatus for the detection of a non-nucleic acid target analyte in a test sample, comprising:

- a) a test chamber comprising an array of first measuring electrodes each comprising:
 - i) a ~~self-assembled monolayer~~ passivation agent monolayer; and
 - ii) a binding ligand covalently attached to said electrode via a spacer;
 wherein said test chamber further comprises at least one second measuring electrode; and
- b) a voltage source electrically connected to said test chamber.

Claim 21: (Canceled)

22. (Currently Amended) An apparatus according to claim ~~21~~ 20 wherein said spacer is a conductive oligomer ~~has~~ having the formula:



wherein

Y is an aromatic group;

n is an integer from 1 to 50;

g is either 1 or zero;

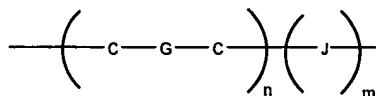
e is an integer from zero to 10; and

m is zero or 1;

wherein when g is 1, B-D is a conjugated bond; and

wherein when g is zero, e is 1 and D is preferably carbonyl, or a heteroatom moiety, wherein the heteroatom is selected from oxygen, sulfur, nitrogen, silicon or phosphorus.

23. (Currently Amended) An apparatus according to claim ~~21~~ 20 wherein said spacer is a conductive oligomer ~~has~~ having the formula:



wherein

n is an integer from 1 to 50;

m is 0 or 1;

C is carbon;

J is carbonyl or a heteroatom moiety, wherein the heteroatom is selected from the group consisting of oxygen, nitrogen, silicon, phosphorus, sulfur; and

G is a bond selected from alkane, alkene or acetylene, wherein if $m = 0$, at least one G is not alkane.

Claims 24-29: (Canceled)

30. (New) An apparatus for the detection of a non-nucleic acid target analyte in a test sample comprising:

a) a test chamber comprising an array of electrodes each comprising:

i) a passivation agent monolayer; and

ii) a binding ligand covalently attached to said electrode via a spacer:

wherein said test chamber further comprises at least one second measuring electrode; and

b) a voltage source electrically connected to said test chamber; and

c) an electronic detector.

31. (New) An apparatus according to claim 20 or 30 wherein said passivation agent monolayer comprises insulators.

32. (New) An apparatus according to claim 20 or 30 wherein said passivation agent monolayer comprises conductive oligomers.

33. (New) An apparatus according to claim 20 or 30 wherein said passivation agent monolayer comprises insulators and conductive oligomers.

34. (New) An apparatus according to claim 20 or 30 wherein said binding ligand is a protein.

35. (New) An apparatus according to claim 20 or 30 further comprising a processor coupled to said electrodes and configured to receive an output signal.